

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions of claims in the application.

Listing of Claims

Claims 1-19 (cancelled)

Claim 20 (new): A method for preparing a circuit board material, comprising:

providing a plating bath comprising: nickel sulfamate at a concentration of 300 to 600g/l;
and at least one of phosphoric acid, phosphorous acid, hypophosphorous acid, and salts thereof at
a concentration of phosphorus of 20 to 150g/l;

providing an electrode inside the plating bath;

providing a conductive metal foil inside the plating bath to face the electrode, the
conductive metal foil having a first surface and a second surface, the second surface being
masked; and

applying current between the electrode and the conductive metal foil to form a thin
resistance layer plated on the first surface of the conductive metal foil to prepare a circuit board
material.

Claim 21 (new): A method for preparing a circuit board material according to claim 20, wherein the conductive metal foil is selected from the group consisting of copper foil, aluminium foil, aluminium alloy foil, and iron alloy foil.

Claim 22 (new): A method for preparing a circuit board material according to claim 20, wherein the plating bath further comprises at least one of sulfuric acid, hydrochloric acid, and salts of the same.

Claim 23 (new): A method for preparing a circuit board material according to claim 20, wherein the plating bath has a pH of not more than 6.

Claim 24 (new): A method for preparing a circuit board material according to claim 20, wherein the plating bath is kept at a temperature of 30 to 80°C.

Claim 25 (new): A method of preparing a circuit board material according to claim 20, wherein the current is applied at a current density of 1 to 30 A/dm².

Claim 26 (new): A method of preparing a circuit board material according to claim 20, wherein the circuit board material is adhered to an insulating material and wherein the circuit board material is etched to make a circuit pattern.

Claim 27 (new): A circuit board material, comprising:

a conductive metal foil having a first surface and a second surface;

a thin resistance layer formed on the first surface of the conductive metal foil, wherein the thin resistance layer is formed in a plating bath comprising: nickel sulfamate at a concentration of 300 to 600g/l; and at least one of phosphoric acid, phosphorous acid, hypophosphorous acid, and salts of the same at a concentration of phosphorus of 20 to 150g/l.

Claim 28 (new): A circuit board material according to claim 27, wherein the conductive metal foil is selected from the group consisting of copper foil, aluminium foil, aluminium alloy foil, and iron alloy foil.

Claim 29 (new): A circuit board material according to claim 27, wherein the thin resistance layer is made of an Ni alloy containing 2 to 30 wt% of P.

Claim 30 (new): A circuit board material according to claim 27, wherein the thin resistance layer formed on the conductive metal foil has a surface having a roughness Rz of not more than 3.5 μm .

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Claim 31 (new): A circuit board material according to claim 27, wherein the circuit board material is adhered to an insulating material and wherein the circuit board material is etched to make a circuit pattern.